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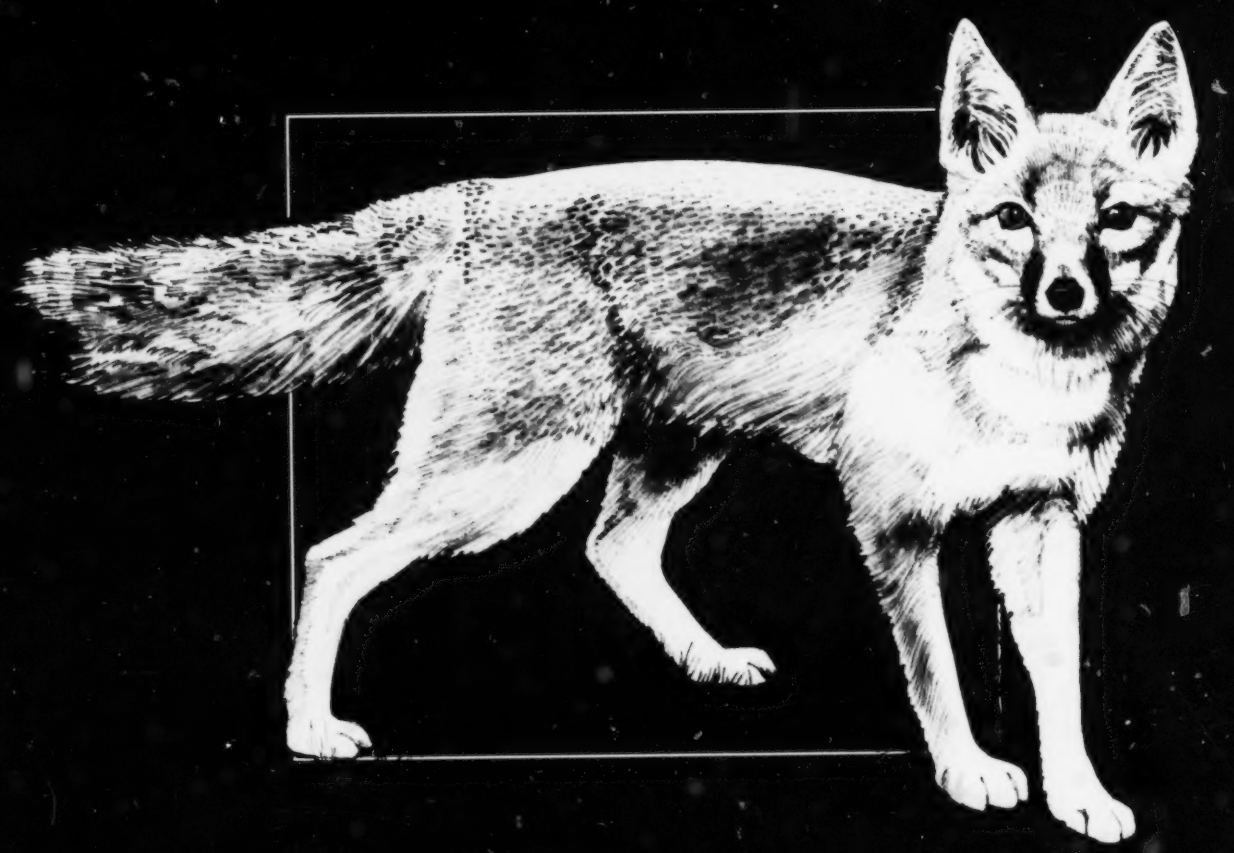

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SWIFT FOX

Status

Until recently the Swift Fox was considered to be extirpated in Canada. That is, the Swift Fox was extinct in areas it used to occupy in Canada but continued to exist elsewhere in the world. The last documented record of a wild Swift Fox in Canada was in 1928, at Govenlock, near the Saskatchewan-Alberta border. Today, a program to bring these speedy little foxes back to their previous range is underway in Alberta and Saskatchewan. Although Swift Fox can again be seen flashing across the prairies, the population is still small and endangered.

Historically, Swift Fox were common throughout the mixed and short-grass prairie regions of the Great Plains. Their range extended from southwestern Manitoba westward to the foothills of the Rocky Mountains and from central Alberta southward throughout the midwestern United States to Texas. Large numbers of foxes were trapped for fur in the mid 1800s even though the pelts were small and coarse. The population decreased rapidly in the early 1900s as hundreds of foxes were killed accidentally during predator control programs aimed at removing wolves, coyotes, and ground squirrels from the prairies, and as large areas of its grassland habitat were converted to cultivated cropland.

Currently the U.S. population of wild Swift Fox is restricted to a narrow north/south band from South Dakota to Texas. There is a stable population of foxes in the central region of this band (Colorado, Kansas, New Mexico, and Wyoming) but they are scarce in the north and the south. The small population which has been re-established in Canada remains isolated from other wild populations.

Description

The Swift Fox is the smallest of the North American wild dogs. Soaking wet, they are the size of a large house cat. When dry, their long coarse hair makes them look larger. An adult Swift Fox weighs 2 to 3 kg (about half as much as a Red Fox).

The characteristic features of a Swift Fox are its small size, long black-tipped bushy tail, and black facial spots on each side of the muzzle. In general, they are a soft grey colour tinged with orange or tan on the legs and lower half of the body. The throat, chest, and belly are white to buff brown. The Swift Fox can be most easily distinguished from the much more common Red Fox by their grey back, black spots on each side of the muzzle, and especially their black-tipped tail. For a small animal, the Swift Fox is lean, long in the body, and long-legged, making it well adapted for speed. It has large ears and dark bright eyes. Both sexes look similar although males (dogs) may be slightly heavier than females (vixens).

Habits

Swift Fox survive by using their speed. They range over large areas of open native prairie and may reach speeds over 50 kph. In Canada they prefer to live on flat plains with low ground cover where they can see a long way and move without restrictions. Short-grass regions with buffalo grass, blue grama, bluestem, and wire grass are excellent Swift Fox habitat.

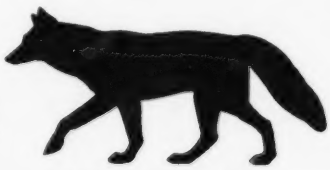
Swift Fox spend more time underground than any other member of the dog family. They use ground burrows or dens throughout the year for protection from cold winter temperatures and the fierce prairie wind and sun, as a place to rear their young, and as a way to avoid predators. A pair of foxes usually has a number of burrows within their home range and may use up to 13 different dens throughout the year. Obviously, a lot of spare time is spent digging new dens or renovating old ones!

Burrows are usually located in well-drained soil on a small hilltop with a good view of the surrounding prairie. The few foxes that continue to use cultivated areas use burrows along fence rows or in roadside ditches. Burrows may be simple and short with only one entrance or a complex maze of interconnected tunnels and entrances. Simple dens are often used as temporary resting sites or for shelter during the winter. Complex dens are used as natal dens where the pups are born and raised. Swift Fox often dig their own burrows but may also modify dens abandoned by badgers or Richardson's ground squirrels ("gophers"). Swift Fox dens can be identified by the lack of a dirt mound at

JACKRABBIT (2.5-4.0 kg)

SWIFT FOX (2.0-2.5 kg)

RED FOX (4.5-5.5 kg)



COYOTE (9.0-16.0 kg)

the entrance. The foxes drag the dirt away from the entrance in a straight line and stamp and kick at it until it is spread out among the grass. The entrance to a den is approximately 15 to 20 cm across.

Each pair of foxes regularly uses a home range, or area of normal use, centered around the natal den. The size of the home range depends on the availability of food, short-grass vegetation, and flat open areas. When the number of Swift Fox in an area is high, home ranges of different pairs often overlap. If suitable habitat and food are available, young foxes will take a home range close to where they were born. Otherwise, they move away from the natal area until they find an appropriate site.

Reproduction

During the breeding season activity centres around the natal den. Breeding probably occurs during March in Canada and pairs may stay together or change between years. Swift Fox can breed successfully in their first year and usually live from 3 to 6 years in the wild. (They can live up to fourteen years in captivity).

Following a gestation period of about 50 days, one to seven pups (the average is 3.9 pups per litter in the Canadian wild population) are born in the den in mid-May. Blind and helpless, the pups depend completely on the female for food and protection. She stays underground with the pups while the male hunts and brings food to the den. Later, both adults will supply food for the young foxes.
Approximately 10 to 15 days after birth, the pups' eyes open. The young foxes begin to move around in the den but do not appear at the entrance until they are nearly one month old. Swift Fox pups are active and playful near the den for the next two to three weeks; however, they sleep underground and quickly dive into the burrow if danger threatens. Although pups are weaned at six to seven weeks of age, they stay with the adults until they are four or five months old, usually staying within the home range and near the dens.

Adult foxes will often move pups to different dens throughout the summer. In many cases, parasites (fleas, ticks, and mites) that build up in large numbers in the underground burrows are enough to drive the foxes out of the den. Foxes may also change dens as a result of disturbance by humans or cattle or for no apparent reason.

Courtesy - L.N. Carbyn CWS

Food

Swift Fox are nocturnal predators. They hunt continually from dusk to dawn and cover great distances in the home range each night. They also are opportunistic; that is, they take whatever they can catch. A list of food items includes small mammals, birds, reptiles, amphibians, fish, insects, and occasionally some grasses, and berries.

The diet of Swift Fox changes throughout the year according to whatever is abundant and in season. However, in Canada they depend heavily on mice, larks, insects, and ground squirrels. The eggs of ground nesting birds are eaten in the spring and many grasshoppers are eaten in the summer. In addition, dead animals (carrion) are often scavenged off roads within the home range.

Limiting Factors

The major problems facing the Swift Fox relate to human impacts on the prairie environment. Habitat loss associated primarily with agricultural development contributed to the extirpation of the Swift Fox from Canada. The foxes do not do well in cultivated landscapes or in cereal crops.

Swift Fox are adapted to large areas of native prairie grassland. Their restoration depends on the survival of the few remaining large blocks of prairie. Continuing pressure to develop such areas for agricultural, industrial and urban uses can limit the Swift Fox population.

In the first part of this century hunting, trapping and predator poisoning contributed to the extirpation of the Swift Fox. Today, the vast majority of people are very supportive of the Swift Fox reintroduction and protect the foxes. Nonetheless a few foxes have been accidentally shot or trapped. Foxes have also been hit by cars and have died after eating poisoned ground squirrels.

Our reintroduced Swift Fox population is also affected by natural predators. Coyotes are the most commonly reported cause of mortality for released Swift Fox. It appears they kill Swift Fox both for food and as a territorial response to another canid. The impact of coyotes is probably greater now than it once was because, in the absence of wolves, coyotes have increased in abundance on the prairie. Bobcats, golden eagles and badgers are also known to occasionally kill Swift Fox. Swift Fox appear to be most successful in flat, open country, perhaps because there is less risk of predators surprising them in such areas.

The weather is a final and very important limiting factor. Drought can lead to a reduction in populations of prey species. Severe winters with deep snow and/or ice crusts can make small mammals unavailable under the snow.

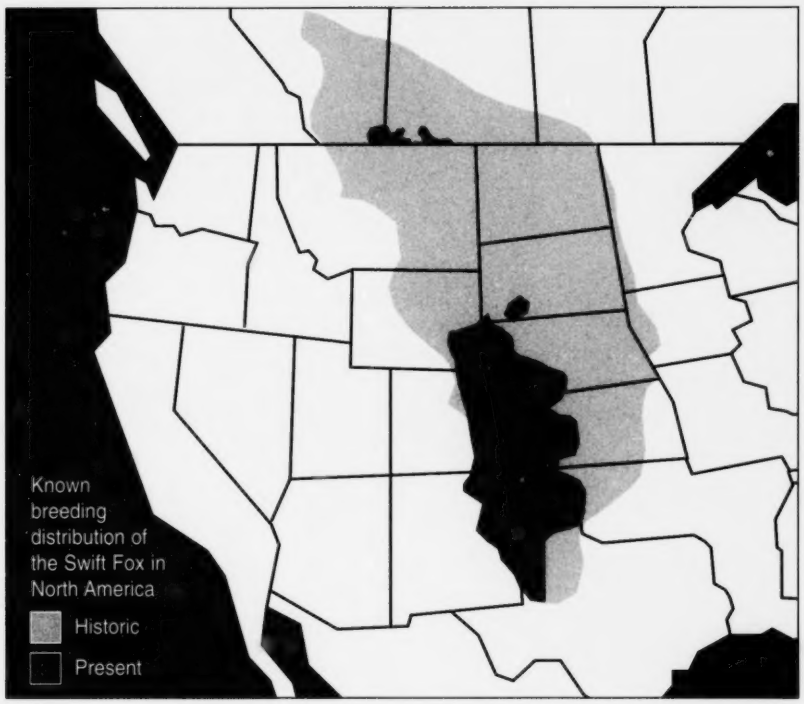
In these cases, Swift Fox risk starving. In addition, as the foxes spend more time hunting, they take more risks and are more likely to be hit by vehicles or captured by predators such as coyotes. Swift Fox populations in Canada are expected to rise and fall in response to good and bad years. The effect of drought in the 1930s may have been the final blow to the historic Swift Fox population which was already very reduced by human pressures.

Management and Outlook

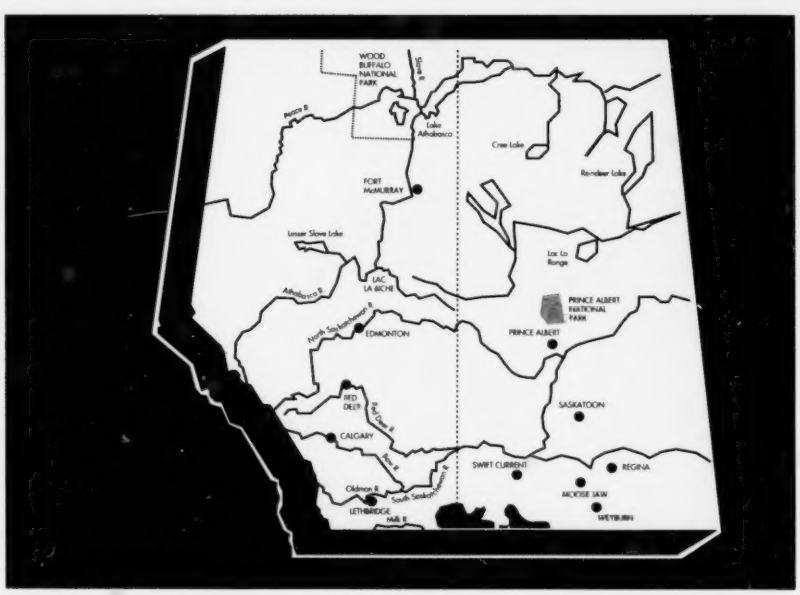
Since the late 1970s, federal, provincial, and private agencies have cooperated in trying to re-establish wild populations of Swift Fox in Alberta and Saskatchewan. These efforts have provided much information concerning the biology of free-ranging Swift Fox, habitat availability in the Canadian prairies, factors which limit the population, and maintenance of foxes in captivity. More importantly, a small population of Swift Fox has been established in southeastern Alberta and southwestern Saskatchewan. Released individuals are reproducing and the population appears to be maintaining itself.

As they learn more about the Swift Fox, biologists have developed more effective release techniques. Initially, all foxes for release were raised in captivity at the Calgary Zoo, Edmonton Valley Zoo and Cochrane Wildlife Reserve in Alberta and at the Moose Jaw Zoo in Saskatchewan. Since 1983, offspring of these captive foxes have been released using the soft release, semi-hard release, and hard release techniques.

A soft release involves a pair of captive-raised foxes kept overwinter in pens at a prairie release site. Food and an artificial den are provided in the pens before and after the foxes are allowed to run free. This method allows released foxes to get used to their new surroundings but always have a familiar den and source of food to come back to.



From 1983 to 1986 inclusive, 97 Swift Fox were soft-released in southern Alberta. Released foxes generally stayed near the pens. Unfortunately, survival was low (about 5%) and many of the foxes were killed by coyotes or bobcats. Apparently the foxes are at great risk by staying near the pens as the food put out for them may also



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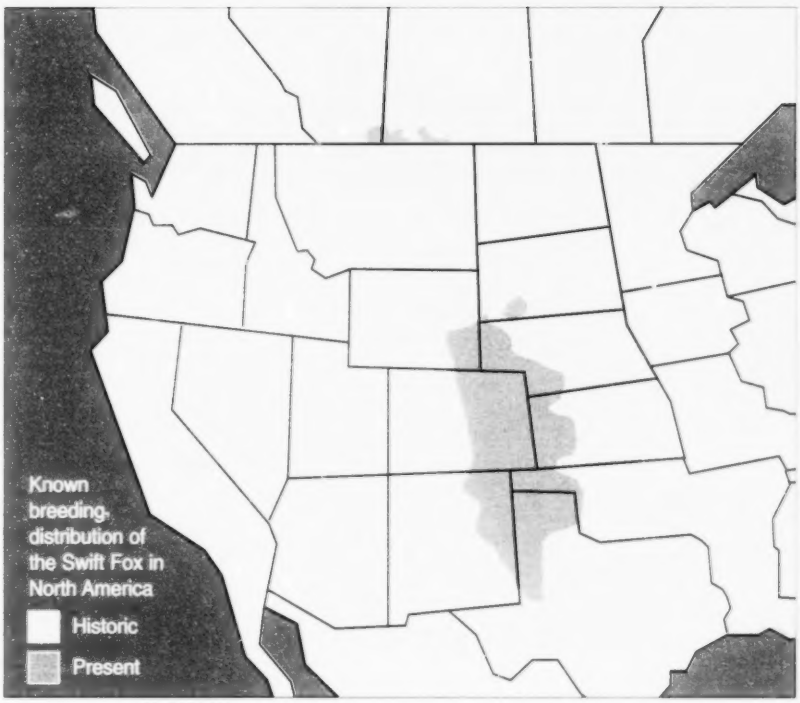

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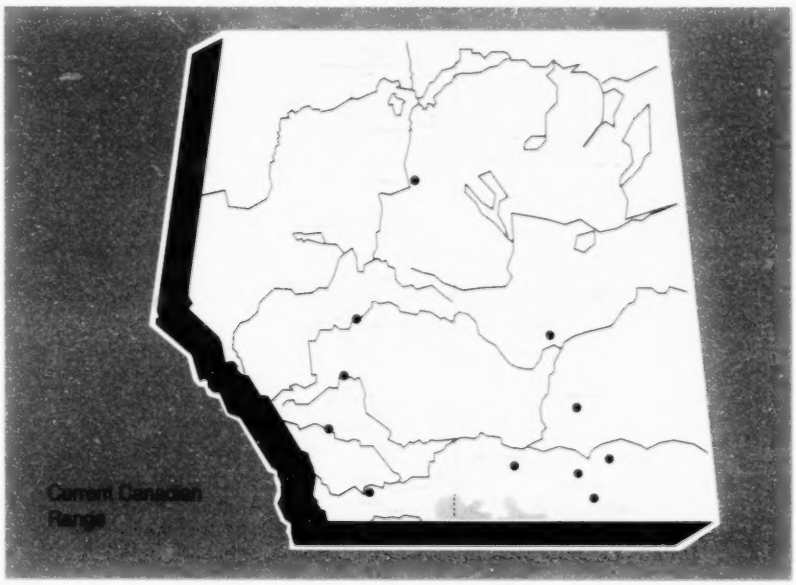


Courtesy - K. Sturgess

Den site.

Courtesy - L.N. Carbyn CWS

Courtesy - G. Scotter CWS

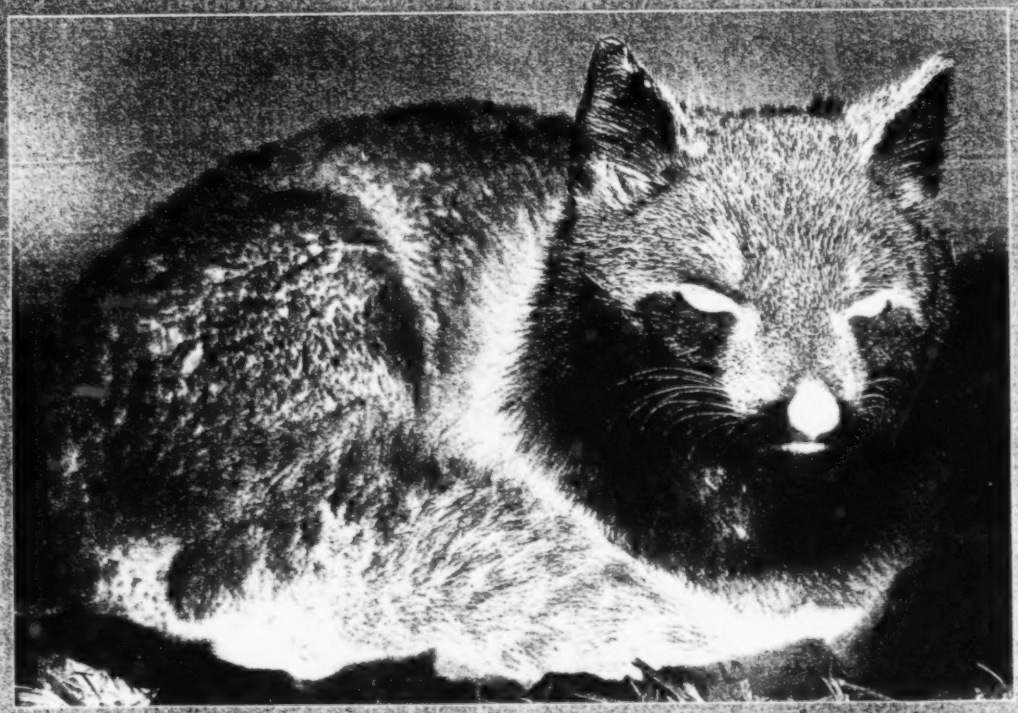
Releasing a Swift Fox

attract other predators.
A semi-hard release is similar to a soft release except that food is not provided after the foxes are let out of the pens (the releases occur in mid-summer when food is abundant). Up to January 1987, 39 Swift Fox were released this way in southern Saskatchewan. They soon left the release sites and the survival rate (about 22%) was better than with soft releases.

A hard release involves a direct release of foxes which were not held at the site prior to release. A large number of foxes are released at the same time over a wide area. This method has been used exclusively since the fall of 1987, and almost 700 animals have been released in this way. In addition to large numbers of captive bred foxes, biologists have released wild-born foxes transplanted from healthy populations of Swift Fox in Wyoming. Since 1993, a modified hard release technique has been used with some captive-reared Swift Fox. A small shelter, identical to the shelter from the cage where the foxes had been raised, was placed at the release site. This provided a safe refuge from which the foxes could explore and appeared to provide a home base and refuge during the first difficult days for the newly released foxes.

Released foxes are often equipped with radio collars to allow biologists to follow these animals and learn about their movements, behaviour, and causes of their mortality. This monitoring has shown that Swift Fox experience a relatively high mortality rate. Wild adults in Canada experience 40 to 50% annual mortality. Released foxes experience higher mortality as they must learn how to look after themselves. Wild transplanted foxes adapt quickly and experience about 50% mortality during their first year, while an estimated 74% of captive raised foxes do not survive their first 12 months. Regardless of their origin, released foxes can survive and produce pups.

Computer projections suggest that releases of captive reared or wild caught foxes can establish viable wild populations in Canada, although a larger number of captive reared foxes are required. The Governments of Alberta and Saskatchewan, in cooperation with Environment Canada, have agreed to continue the reintroduction program using captive reared foxes and wild foxes obtained from Wyoming. When this release



Courtesy, J.A. Gerber, CWS

program ends in 1997, enough Swift Fox should be present to maintain themselves in Canada.

Preliminary results from a range-wide census carried out in the winter of 1996/97 indicate that the current population of Swift Fox in Canada is around 350 animals. It is particularly encouraging to note that almost 70% of the foxes identified during this census were wild borne on the Canadian prairie. Released foxes have survived and their offspring are forming the core of a new wild Canadian population.

This positive outlook for Swift Fox on the Canadian prairies depends heavily on public attitude and support. Even after the end of the release program, successful management will need the continued cooperation and participation of special interest groups, commercial organizations and volunteers. The Swift Fox Conservation Society is an example of a group that has successfully promoted the plight of Swift Fox through supporting education and research programs. Public awareness that this little fox is a beneficial predator and a valuable link in the grassland ecosystem is essential for their long-term survival.

The Swift Fox is fully protected under the Alberta and Saskatchewan Wildlife Acts. However maintenance of large expanses of prairie is the most important part of Swift Fox management. Prairie conservation programs developed in association with other land users will benefit wildlife throughout the area, and will help to foster the continued recovery of this unique inhabitant of prairie Canada.

This is one of a series of information brochures on management of Prairie Threatened Wildlife.

For further information on the Swift Fox contact your local wildlife office or write to:

Natural Resources Service
Wildlife Management Division
9945 - 108 Street
Edmonton, Alberta
T5K 2G6

or

Fish and Wildlife Branch
Saskatchewan Environment and Resource Management
3211 Albert Street
Regina, Saskatchewan
S4S 5W6

or

The Canadian Wildlife Service
Environment Canada
2nd Floor, 4999 - 98 Avenue
Edmonton, Alberta
T6B 2X3

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